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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,043	02/28/2002	Michelle D. Fabian	SP02-038	6488
22928	7590	11/18/2003	EXAMINER	
CORNING INCORPORATED			WYROZEBSKI LEE, KATARZYNA I	
SP-TI-3-1				
CORNING, NY 14831			ART UNIT	PAPER NUMBER

1734

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/087,043

Applicant(s)

FABIAN ET AL.

Examiner

Katarzyna Wyrozowski Lee

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-16 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s): \_\_\_\_.
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 0602. 6) ☐ Other:

*Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1 is rejected under 35 U.S.C. 102(a) as being anticipated by BEALL (US 6,300,266)

The prior art of BEALL discloses composition for honeycomb, which traps all the harmful gasses from the exhausts of the vehicles. The honeycomb composition comprises cordierite and binder system in an amount of 2-10 parts by weight. Preferred binder is polyalphaolefin. Surfactant is utilized in amount of 0.2-2 pbw, cellulose polymer is utilized in amount of 2.5-5 pbw and water is amount of 8-25 pbw (col. 5, lines 1-5). The cordierite is formed upon firing raw components, which include silica, talc, alumina and/or aluminum hydroxide. The raw components comprises 11-17 % MgO, 33-41 % Al<sub>2</sub>O<sub>3</sub> and 46-53 % of SiO<sub>2</sub> (col. 3, lines 55-60).

In the light of the above disclosure the prior art of BEALL anticipates requirements of claims rejected above.

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-3, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over NISHIMURA (US 5,766,393) in view of HAMANAKA (US 5,938,992).

The prior art of NOSHIMURA discloses sealing composition for sealing the through-holes of a honeycomb structure.

Steps a-d of the prior art of NOSHIMURA disclose step of introducing expansive material into the through holes of the honeycomb structure and then burning it (col. 3, lines 10-22).

The composition of the prior art of NOSHIMURA comprises inorganic compound and binder. The inorganic compounds are selected from cordierite, mullite, alumina, silicon carbide and the like (col. 4, lines 29-32).

The binder system of the prior art of NOSHIMURA includes cellulose binders, polyvinyl alcohol, starch, waxes (col. 4, lines 35-39), polyethylene, polypropylene, polyurethane, polystyrene, acrylonitrile (col. 5, lines 10-20), epoxy and polyester (examples). The polymer of the prior art of NOSHIMURA expands upon formation of gel (col. 5, lines 5-7).

In example 1 (col. 9-10) steps a-d utilize 15 parts of binder, 2 parts of stearic acid, 25 parts of water and 1 part of trimethylamine as dispersant. Other examples of the prior art of NOSHIMURA disclose compositions that utilize high molecular weight polymer in amounts as low as 3 pbw (col. 10, line 50).

The difference between the present invention and the disclosure of the prior art of NOSHIMURA and the present invention is recitation of the raw materials, which upon burning will for cordierite.

With respect to the above difference, the prior art of HAMANAKA discloses combination of raw materials, which upon burning will form cordierite.

The components capable of forming cordierite of HAMANAKA upon burning comp 42-56 % SiO<sub>2</sub>, 30-45 % of Al<sub>2</sub>O<sub>3</sub> and 12-16 % of MgO (col. 4, lines 30-39).

The prior art of NOSHIMURA discloses teaching of using cordierite in the sealing composition that can be burned. Cordierite is formed upon burning inorganic components such as talc, alumina and silica.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize raw materials as it is disclosed in the prior art of HAMANAKA in order to obtain cordierite taught by the prior art of NOSHIMURA.

7. Claims 4-9, 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over NISHIMURA (US 5,766,393) in view of HAMANAKA (US 5,938,992) as applied to claims 1-3, 10-12 above, and further in view of JOHNSON (US 5,602,197).

The discussion of the disclosure of the prior art of NOSHIMURA and HAMANAKA from paragraph 6 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of NOSHIMURA and HAMANAKA is use of other polymers capable of forming gels as well as use of waxes and amounts of organic component in ceramic batch.

With respect to the above disclosure the prior art of JOHNSON discloses composition comprising reversible gel binders utilized to make powders in ceramic batches (Abstract).

The polymer of the prior art of JOHNSON includes polyethylene/acrylic acid polymers, butyl methacrylate/acrylic acid polymers and styrene triblock polymers (col. 7, lines 20-23). Preferred styrene triblock polymers include styrene-ethylene/butylenes-styrene polymers under the name of KRATON (col. 7, line 46-50).

Waxes and other organic additives utilized in the composition of JOHNSON increase the gel breakdown temperature of the binder as to give binder excellent burnout properties (col. 8, lines 7-8 and 50-51). The additives can also reinforce or strengthen high molecular weight polymer, they alter binder's physical properties such as hardness, strength, flexibility, flow and mold release. Waxes of the prior art of JOHNSON include oxidized polyethylene wax, carnauba wax or fatty alcohol wax (Table I col. 10).

In Table I discloses use of waxes in a range of 11.9-46.2, dispersant in amount of 3.5, high molecular weight polymer in amount of 3.9-40.

The sealant for the honeycomb structure of the prior art of NOSHIMURA and HAMANAKA is formed in ceramic batch process with small amount of binders that gels. The composition is fired to obtain the structure. At the same time the prior art of JOHNSON discloses gelling polymers that can be utilized in the ceramic batch process as such binder system have excellent burnout properties, which will leave ceramic composition in tact upon firing.

In the light of the above disclosure, having read and understand the disclosures at hand, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize the binder system of JOHNSON in the composition of NOSHIMURA and

thereby obtain the claimed invention. Using such binder system would produce composition that has excellent burnout properties upon firing.

*Allowable Subject Matter*

8. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record does not disclose use of crosslinking agent. In fact the sealing of the prior art of record is temporary.

Beginning December 8, 2003 as a result of move to a new campus the phone number to the examiner of record will change to 571-272-1127

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski Lee whose telephone number is (703) 306-5875. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (703) 306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

*Katarzyna Wyrozebski Lee*  
Katarzyna Wyrozebski Lee  
Primary Examiner  
Art Unit 1714

November 12, 2003